



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,691	09/09/2003	Kevin J. Kayser	GTI-1512	3536
7590 05/14/2004				
Mark E. Fejer Gas Technology Institute 1700 South Mount Prospect Road Des Plaines, IL 60018			EXAMINER KOSSON, ROSANNE	
			ART UNIT 1651	PAPER NUMBER

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/658,691	KAYSER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Rosanne Kosson	1651	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on September 9, 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-24 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-3, drawn to a method for carbazole biodegradation, classified in class 435, subclass 262.5.
- II. Claims 4-7, drawn to a method for removal of nitrogen from nitrogen-containing fossil fuels, classified in class 435, subclass 281.
- III. Claims 8-10 and 15, drawn to a method for selective cleavage of C-N bonds using *Sphingomonas sp.*, classified in class 435, subclass 128.
- IV. Claims 8, 9, 11 and 15, drawn to a method for selective cleavage of C-N bonds using *E. coli*, classified in class 435, subclass 128.
- V. Claims 8, 9 and 12, drawn to a method for selective cleavage of C-N bonds using *Sphingomonas sp.* and *Pseudomonas resinovorans*, classified in class 435, subclass 128.
- VI. Claims 8, 13, 15 and 16 drawn to a method for selective cleavage of C-N bonds using *Rhodococcus erythropolis*, classified in class 435, subclass 128.
- VII. Claims 8, 14 and 16 drawn to a method for selective cleavage of C-N bonds using *Pseudomonas sp.*, classified in class 435, subclass 128.
- VIII. Claims 8 and 15 drawn to a method for selective cleavage of C-N bonds using *Thermus thermophilus*, classified in class 435, subclass 128.

Art Unit: 1651

- IX. Claims 17-19 drawn to an operon encoding enzymes capable of selectively cleaving both of C-N bonds in carbazole and a bacterial culture comprising the operon, classified in class 536, subclass 23.2.
- X. Claims 20-21 drawn to a bacterial culture, classified in class 435, subclass 252.3.
- XI. Claim 22 drawn to a DNA sequence comprising a *carA* gene from *Sphingomonas sp.* and at least one amidase gene and a biologically pure culture of *Sphingomonas sp.* comprising the DNA sequence, classified in class 536, subclass 23.2.
- XII. Claims 23-24 drawn to a biologically pure culture of *Sphingomonas*, ATCC No. BAA-487, classified in class 435, subclass 252.3.

The inventions of Groups I and II, Groups I and any of III-VIII, and Groups II and any of III-VIII are materially distinct methods which differ at least in objectives, method steps and reagents used. These inventions are unrelated processes. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and if they have different modes of operation, different functions and different effects (see MPEP §§ 806.04 and 808.01). In the instant case, the different inventions are directed to processes having materially different steps because invention I is a method for degrading carbazole, whereas as invention II is a method of removing nitrogen from fossil fuel, and inventions III-VIII are methods for the cleavage of C-N bonds using various organisms. Clearly, these processes have different modes of operation, functions and effects.

Art Unit: 1651

The inventions of Groups III-VIII are drawn to methods using different microorganisms or mixtures of different microorganisms. Because each of the microorganisms is a distinct product from the others, methods using these different microorganisms are considered patentably distinct processes, and separate searches would be required.

Groups IX and XI are distinct, each from the other, because the groups are drawn to different DNA molecules, which are materially different products. The search required for Group IX is not required for Group XI, and visa versa. Therefore, restriction for examination purposes as indicated is proper.

Groups IX and X are distinct inventions because the bacterial culture of Group X need not contain the operon of Group IX. The search required for Group IX is not required for Group X, and visa versa. Therefore, restriction for examination purposes as indicated is proper.

Groups X and XII are distinct, each from the other because the groups are drawn to different host cells. The search required for Group X is not required for Group XII, and visa versa. Therefore, restriction for examination purposes as indicated is proper.

Groups XI and XII are distinct inventions because the DNA molecule of Group XI may be used in a host cell other than the biologically pure culture of mutant *Sphingomonas* of Group XII. The search required for Group XI is not required for Group XII, and visa versa. Therefore, restriction for examination purposes as indicated is proper.

Art Unit: 1651

Any of Groups X or XII is distinct from any of Groups I-VIII because the inventions of Groups I-VIII may be practiced with a microorganism other than the microorganism of Groups IX-X, such as native *Sphingomonas sp.* The inventions of Groups IX-XI may be used in methods other than the inventions of Groups I-VIII, such as production of the proteins encoded by the recombinant DNA molecules.

Any of Groups IX or XI is distinct from any of Groups I-VIII because the methods of Groups I-VIII are inventions unrelated to the DNA molecules of Groups IX and XI. The DNA molecules of Groups IX and XI are not required to practice the processes of Groups I-VIII, as these processes may be carried out with a microorganism that does not contain the DNA molecule of Groups IX or XI, such as native *Sphingomonas sp.* Further, the DNA molecule of Groups IX or XI may be used in methods other than the inventions of Groups I-VIII, such as transfection into a host cell to produce the proteins encoded by these DNA molecules.

Because these inventions are distinct for the reasons give above and have acquired a separate status in the art as shown by their classification, restriction for examination purposes as indicated is proper. Furthermore, because these inventions are distinct for the reasons given above, and the search required for one group is not required for another group, restriction for examination purposes as indicated is proper.

Applicants are reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

Art Unit: 1651

remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

A telephone call was made to Applicants' representative, Mr. Mark Fejer, on May 11, 2004 to request an oral election to the above restriction requirement, but did not result in an election being made.

**Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosanne Kosson whose telephone number is 571-272-2923. The examiner can normally be reached on Monday-Friday, 9:00-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached at 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1651

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Rosanne Kosson  
Examiner  
Art Unit 1651

rk  
2004-05-11

  
FRANCISCO PRATS  
PRIMARY EXAMINER